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ABSTRACT

This paper discusses the impact of emerging developmental skills on preschoolers' test performance in reference to preoperational thinking, behavioral controls, and language skills. It is emphasized that some behaviors that occur during the preschool period may suggest pathology when observed in older children but are normal for preschoolers. A Piagetian model is used to conceptualize how the preschooler's behavior can influence test outcomes. Specific strategies for eliciting a better test performance are described in reference to the following problems: reactions to failure, overreactivity and distractibility, negativism and oppositional behavior, and perseverance on old tasks or manipulation to avoid new tasks. (Author/SS)

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INFLUENCES OF PRESCHOOLER'S BEHAVIOR ON ASSESSMENT

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There are several special considerations that must be made when conducting a psychological or clinical assessment of preschool age children (2-6 years). One important fact is that many behaviors that occur during the preschool period would indicate psychopathology if observed during school age (6-12 years) but are normal and expected for the younger child. This occurs in part because of the many developmental changes occuring in the transition from infancy to school age as new cognitive competencies are emerging. Piagetian theory and recent studies of this model provide a framework and knowledge for understanding the developmental tasks the child is busily attempting to master. This model and information about characteristics of preschool behavior are essential for appropriate integration of psychological evaluations of preschool children. This paper will discuss the impact of emerging developmental skills on test performance and the areas of (1) preoperational thinking, (2) behavioral controls, and (3) language skills. Some specific strategies for eliciting a more optimal test performance will then be described.

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Preoperational Thinking

The preschool child's thinking and reasoning are in transition from the sensorimotor (nonverbal) level to the use of mental symbols and language. During infancy, sensorimotor intelligence is expressed by adaptive actions in the form of interactions with objects. Between 2 and 6 years, the child learns to internalize this knowledge by way of symbolic representations. Piaget (1951, 1961) has described

the preschool child's thinking as preoperational. The Piagetian model provides a conceptual framework for understanding and integrating the child's behavior relative to his level of understanding of the environment. The child's thinking is described as preoperational because the child's explanations of events indicate an appreciation of or focus on a limited point of view, or only one dimension of actions or operations. For example, elongating one of two pieces of clay of the same volume will often elicit a response that one is now bigger because it is longer, focusing on length but not accounting for width. Causality is often explained by an association that may have little logical connection other than continguity such as "clouds move because of the sun."

In Piaget's theory, the preschoolers' thinking is "egocentric" in that only one viewpoint is expressed or is taken. This results in minimal regard for ensuring that a listener understands an explanation. In contrast, the school age child learns to monitor her responses with concern about giving the correct answer and attends to feedback from the examiner that indicates the appropriateness of the response. The preschool child generally has not learned or develoepd a concern about the listener's understanding and attends less to reinforcing feedback. Therefore, a major problem during assessment is the young child's minimal concern about ensuring that the examiner understands her explanation or solution to a task. Gelman (1978) suggests that the problem is the child has not "learned the rules". However, very young children do appear to be capable of some appreciation of anothers perspective when tasks are adequately structured. An example of not having learned the rules is the assumption that a social reinforcer (smiling or "good stacking") will encourage the child to continue an activity or to work harder. The preschool child has not yet learned or may not be "reinforced" by pleasing an adult. One cannot

assume the contingent reinforcer was effective because of the child's limited experience or learning with this type of situation. The preschool child is often more reinforced by the action or involvement with a task at a level he or she is understanding.

Preoperational thought can give the impression of loosely associated thinking and distorted logic when compared to older children. It is the lack of balance in the reasoning (only considering one aspect of an operation) that characterizes preoperational thinking. The clinician must be aware of the age appropriateness of the child's reasoning and qualitative differences to be able to evaluate a deficit in the child's cognitive skills. This can only be accomplished by observing carefully the child's responses and inferred reasoning when solving problems instead of simply focusing on the right or wrong answers. The challenge for the examiner is to determine why the child failed the task and what level it was understood. Piaget has described in some detail the child's development of preoperational concepts of classification, numbers, spatial relations and temporal relations. Test items on the Stanford-Binet or other preschool cognitive measures can be further investigated for levels of understanding with knowledge of how their skills develop. For example, a failure on a "number concept" item could be followed by adding other levels of tasks to assess the child's counting skills and skills related to number concepts such as those described by Gelman 1972 and Gelman and Tucker 1975.

Behavioral Controls

The child's nonverbal behavior also indicates the limited dimension and egocentricism of preoperational thinking. The two to three year old child is often testing limits and will refuse items or be

easily distracted by items of more intrinsic interest. In part, this is related to the child's emerging sense of himself as an individual and his struggle for autonomy. The two year old is infamous for his resistance and independence during testing. The behavior reflects the child's unwillingness or "inability" to assume the perspective or point of view of the examiner. This limited viewpoint indicates pre-operational thinking and the child's attempts to define boundaries between himself and the environment. This style is an indication of appropriate development of behavioral controls. This resistance and struggle make a reliable cognitive assessment difficult but are important information about the child's emotional development. These behaviors should be noted as normal behavioral reflecting the child's level of functioning emotionally. Techniques for eliciting a reliable assessment of an oppositional child will be discussed later in this paper.

At the three to six year level, the child's behavior becomes less of a struggle with limits, and elaborate strategies evolve to obtain desired outcomes (reinforcement). With increased language and extensive imitative behaviors (identification with parent figures), the child uses "manipulation" or appeal to adults to gain some control. The child's imitation skills allow for "adult-like" behaviors that lack the operational understanding of the adult. The child begins to model the parent's verbal and nonverbal behaviors without the appreciation of how it is perceived by others. During testing, this may be seen in the form of various social behaviors such as more eye contact, smiling, physical closeness, or verbal responses. These behaviors are ways of getting attention but generally lack a concern about being correct or appropriate and are in this sense egocentric.

The engaging and manipulative behavior of the 3 to 6 year old are

seen as appropriate emotionally. The major problem for the examiner is that these behaviors may not be contingent on task performance behaviors. The examiner will often have to structure and restructure tasks to elicit the optimal attending to a task from the child. For example, the child may not state an obvious verbal answer or complete a task because they don't attend to the cue that this is a valued response. This is again part of not having "learned the rules" for test and school behavior. More flexibility and creativity are required to sort out what the child knows. The use of a conceptual framework is crucial for determining a child's level of understanding of a cognitive competency being assessed.

Language

Most of the major language or communication skills emerge during the preschool period. A knowledge of normal language development is important for evaluating these children. There are some general developmental considerations that should be kept in mind. For example, some dysfluency (stuttering) is expected as the child learns new words or is constructing more complex sentences. While it is normal at the two to three year level, it may occur when previously undeveloped speech is emerging at four or five years of age. This may be misinterpreted as a sign of a stuttering deficit. As a general rule, the dysfluency should be considered in the context of the child's developing language. There is also some expected omission in articulation such as leaving off the first syllable of a word such as "ut" for "but" or "uice" for "juice". The psychologist should also be aware of difference between spontaneous speech and the child's conceptual understanding. A child may have apparent age appropriate social speech such as "hello, how are you today," etc., but have below age

level conceptual understanding of words such as defining words or explanations of events. The young child's verbal behaviors must be understood in terms of normal language and the child's own development to avoid misinterpretation of test observations and data.

Another example, which is a less clear distinction, is that when eye contact is poor, it may be seen as an emotional problem. It may, in fact, be partly secondary to confusion with sounds (auditory processing) and/or a poor social learning and not primarily an indicator of serious emotional concerns. This is somewhat unique to the preschool period because these skills are emerging for the first time and depend on interaction between experiences and maturation.

A third important area is to appreciate the level of difficulty of verbal commands during testing. Many items attempting to measure a concept such as "alike" or "similar" may be failed because of complex verbal levels. A number concept may be failed because the child has to remember two or three steps in a sequence. Knowledge of language skills level acquisition is invaluable for interpretation of performance on tasks that require verbal receptive and/or expressive skills.

Eliciting Test Performance

The psychologist must always strive toward eliciting an optimal performance from the child. Because of differences in development and behavior, the preschool child presents some unique challenges in assessment. The following are some suggested considerations and strategies for eliciting test performance.

(1) Reactions to Failure. Because preschoolers have not learned the rules they show a wide range of differences in attending and perseverance in the face of failure. For example,

significant differences in test performances occur when comparing low SES minority children to middle SES Anglo children. They differ when failures and successes are alternated versus a series of failures (Ziegler and Butterfield, 1968). To avoid obtaining a poor test performance due primarily to frustration resulting from failure, there should be frequent use of earlier items where success is more probable and mix these with more difficult items. This can be done for example with Binet items at different age levels. It is also helpful to have the child show you something he can do such as say the alahabet or count after experiencing several failures. Being able to complete a task is often the most reinforcing procedure rather than social praise. Observations and descriptions of reactions to failure are an important part of an assessment.

(2) Overactivity and Distractibility. There is a wide range of differences in terms of a child's level of activity. A common referral question is to determine if the child is "hyperactive." This term is often misused and is derived from a medical diagnosis of hyperkenesis. The diagnosis suggests a disturbance of the neurological arousal system which is uncommon. It is important to differentiate between children who can attend well on familiar structured tasks and those who have almost no activity in which they are able to attend adequately to completion. Many tasks are failed by preschoolers because they haven't learned the set for answering test questions or performing table top tasks. The examiner must sort out the impact of normal stimulus overload or task difficulty level when observing distractable behaviors. A diagnosis of hyperactivity

should only be done in the context of a complete social and physical history (in conjunction with a medical exam) as well as observations of behavior in different degrees of structure and distractions such as other children. For a more comprehensive discussion, see Ross (1974). A common example is for a child to attend well when faced with tasks he or she can do well and be highly distractable when presented with tasks which involve a deficit skill area or too many stimuli to process.

Testing a highly distractable child is most likely to be successful in a room that has minimal stimuli competing for the child's attention. The examiner should choose items that have some intrinsic interest for the child and provide frequent reinforcement. Often, nonverbal items such as peg boards, form boards or puzzles are useful to elicit better attending behavior. Reducing the number of auditory or visual steps required in a task is helpful. This behavior should then be compared to performances when more stimuli are present (e.g., classroom or background noise). Gelman (1978) has found differences in task performance based on reducing the number of stimuli. These differences are important for establishing educational programming.

(3) Negativism and Oppositional Behavior. To elicit a cooperative response, the examiner must establish a positive set for doing things together. This can be accomplished by starting with games such as playing catch or building a tower together. Once the child is able to avoid tasks by throwing the block or hiding the material, etc., the task should be stopped. The

examiner must then attempt various interactive strategies to get the positive set back. Changes from puzzles to drawings or from structured tasks to free play where the examiner becomes involved can be useful. In a Piagetian framework the examiner is attempting to find the child's level of understanding, this provides intrinsic reinforcers from the action with a task. Consideration of external (distractions, etc.) and internal (fatigue, etc.) factors should be carefully examined. At times, it is necessary to stop the assessment and resume on a different day or at a different time.

While it is often impractical in school settings, it is better to allow for more than one testing session to obtain an optimal test performance from any young child. The young child is less willing or able to suppress other factors that may interfere with testing. Observation of the child on two different days or in different settings improves the reliability of testing and facilitates interpretation of test results.

(4) Perseveration on Tasks. When a child experiences a success or is presented with a novel toy, she may continue the response, making it difficult to introduce a new item. This can be avoided by allowing the child to explore the toy or introduce a new item. There also may be repetition of a behavior that is successful when the child is presented a more difficult task. For example, naming pictures using the same name each time or always stacking blocks instead of building other things. These behaviors may indicate a regression resulting from either not being able to do the task or a manipulation to avoid new tasks. This can be tested by setting firm limits and offering rein-

forcements for different responses or alternating the more difficult with the prefered activity.

Interpretation of Test Data

History. Anytime a child is being evaluated, the psychologist must consider the context in which the child's development and behavior have occurred. This means taking into account all physical and social history that relates to the child's current difficulties. For example, a child who relates poorly in preschool may be suffering from abuse or neglect rather than being emotionally disturbed. A child who has delayed speech may have a motor handicap that interferes with articulation. For the culturally different or disadvantaged child who fails verbal items may not be comprehending the English usage of the words because little or no English is spoken in the home.

Preschool assessment must always account for differences in learning opportunities and experiences with test items. The distinction between functional and organic deficits must be considered. A developmental delay may result from inexperience and should therefore be seen at least in part as functional. In contrast, when two children have had similar experiences, the delayed developmental skills may result from different rates of growth and, in some cases, organic deficits. This can only be determined by careful consideration of the child's history and analysis of test behavior. For example, some deprived children will learn new tasks quickly and/or be overstimulated by the presence of multiple novel stimuli. It is often useful to attempt to teach the first few items failed by preschoolers for observations of the child's learning.

Norms. The interpretation of test data must always take into consideration the similarities between the child tested and the popu-

lation on which a test was standardized. The usefulness of the results is limited when large differences exist. For example, norms that did not include a minority group or lower SES level will not provide a valid score. Test scores derive their meaning by selecting and discriminating across a given population. The examiner must be familiar with the development of the test being used (see module on Selection of Test). One major use of a Piagetian framework for clinical assessment is the use of criterion referenced measures. The clinician focuses on the child's level of functioning within a cognitive competency instead of emphasizing the age level appropriateness of the task.

Summary

Some of the factors a psychologist should consider when evaluating a preschool child were discussed. It has been emphasized that behaviors that occur during the preschool period may suggest pathology when observed in older children but are normal for preschoolers. A Piagetian model was discussed for conceptualizing how the preschooler's behavior can influence test outcomes. The impact of preoperational thought, behavioral controls and language skills were described. The preschool child has not learned many of the "rules" for testing which makes a reliable and valid assessment more challenging.

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